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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/220,821	12/24/1998	J. RICHARD AYLWARD	02103/347001	5571

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225 FRANKLIN ST  
BOSTON, MA 02110

EXAMINER
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LEE, PING

ART UNIT	PAPER NUMBER
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2644

10

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/220,821

Applicant(s)

AYLWARD, J. RICHARD

Examiner

Ping Lee

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 February 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) 9-13, 21-23, 35, 37-39 and 43-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 14-20, 24-34, 36 and 40-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of species 7 in Paper No. 9 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 9-13, 21-23, 35, 37-39, and 43-48 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9. See paragraph 1 above.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claims 1-8, 14-20, 24-34, 36, and 40-42 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The present invention is a device (as shown in Fig. 1 for broad interpretation) for processing a single channel input to generate a five-channel output (elected Fig. 2b)

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and combining the five-channel output to produce a three-channel output (elected Fig. 3c). Signal path 22c in Fig. 3c is a center channel having a spectral pattern representing the speech. However, Fig. 2b as explained by the specification as originally filed fails to show how to obtain signal path 22c having a spectral pattern representing the speech. Signal path 22c is a product of the input signal M multiplied by factor  $\alpha$  and another factor 1.414. This product has a spectral pattern of audio frequency in the original input signal. Applying the signal path 22c as shown in Fig. 2b to the input of signal path 22c in Fig. 3c would not produce the invention as intended. The intended invention is to provide the signal within the speech spectral to the center channel and the rest of the signal is being delayed and then generated by other channels. Therefore, the specification as originally filed fails to provide an enable description to enable one skilled in the art to which it pertains, or which it is most nearly connected, to make and/or used the invention.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2-4, 17, 26-28, 31, and 40-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites the limitation "the latter signals" in line 4. There is unclear what these signals are.

Claim 3 recites the limitation "said factor is variable with respect to time". This is incorrect because the delay time will not altered as disclosed in the specification as originally filed. Claim 31 has the similar defect.

Claim 17 recites the limitation "said variable gain" in 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 26 recites the limitation "said circuit" in lines 1-2. It is unclear which circuit it is referred to.

Claim 40 recites the limitation "said two decodable audio channel signals" in line 12. There is insufficient antecedent basis for this limitation in the claim.

Claim 42 recites the limitation "said second and third decodable audio signals" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 6, 8, 14, 18, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Shiraki (US 5,197,100).

Regarding claims 1, 6, 8, 14, 18, 20 and Shiraki discloses an audio signal processing apparatus for processing a single-channel audio signal to provide a plurality of audio channel signals, comprising a separator, for separating the audio signal (after

7) into a first separated signal (to 11) and a second separated signal (to 12, 13), a first circuit (12, 13) and a processing step (by 11) to provide a first audio-channel signal.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

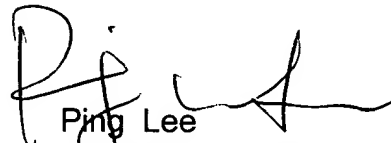
10. Claims 2 and 16 rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraki.

Regarding claims 2 and 16, Shiraki shows an amplifier (17 or 18), but fails to explicitly show a multiplier. The amplifier as taught by Shiraki, mathematically, performs multiplication of the input signal. Shiraki teaches an analog system having the amplifier and the speaker. However, one skilled in the art would have expected that a well known digital equivalent (a digital amplifier is a multiplier) would work equally well. Thus, it would have been obvious to one of ordinary skill in the art to modify Shiraki's system by using a well known digital equivalent circuit for performing the amplification in order to generate the signal through a digital speaker with a better performance.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 703-305-4865. The examiner can normally be reached on Monday and Tuesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.



Ping Lee  
Primary Examiner  
Art Unit 2644

pwl  
May 5, 2003